

**A b s t r a c t**

A repeater for HDSL transmission is presented. The repeater replaces the regenerator commonly used in HDSL by utilizing the activation/deactivation process in the HDSL  
5 specification. The repeater is adjusted to detect an activation/deactivation sequence, whereby a flip-flop in the repeater is alternated. A first state of the flip-flop allows transmission passing through the repeater to the terminating point, e.g. a network terminal, and a second  
10 state loops transmission back to the originating point, e.g. a line terminal. The looping may then be utilized for maintenance and error detection and recovery. By use of one of the free bit in the overhead channel in the HDSL transmission as an origin bit, wherein "1" is set in the  
15 upstream direction, and "0" is set in the downstream direction, it is possible to detect at the line terminal whether there is a loop in the repeater.

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